



**File Code:** 3420 Detection (NA-04-01)  
**Date:** October 15, 2003

Subject: 2003 Aerial Sketchmapping Survey

To: Clyde Thompson, Forest Supervisor  
Monongahela National Forest

On July 14, 15, and 16, 2003, Rick Turcotte, of Forest Health Protection (FHP), Morgantown along with Amy Mullins, Kenneth Irvine and Terry Evans conducted an aerial sketchmapping survey of the Monongahela National Forest. The accompanying maps show the general locations and types of damage observed during these flights.

### Summary

This year, gypsy moth caterpillars noticeably defoliated 8,801 acres of oak forest within the Potomac and Marlinton Ranger Districts. Site visits to the area documented light defoliation and the presence of very few new egg masses. Widespread mortality (both present and past) and discoloration of American beech were mapped on 68,146 acres. Anthracnose leaf blights and leaf spot injury were also documented on 18,118 acres on a variety of hardwoods (chestnut oak, white oak, maples, sycamore, etc.).

### Survey Results

This year, gypsy moth defoliation, scattered beech mortality pockets, and anthracnose damage were observed within the proclamation boundaries of the Forest. The following table shows the number of acres sketchmapped for each District.

**2003 Sketchmapped Damage in Acres**

District	Gypsy moth Defoliation	Beech bark Disease	Anthracnose Damage	Unknown Damage*	Total
Cheat	0	9,382	1,383	1,916	12,681
Gauley	0	11,642	4,434	2,557	18,633
Greenbrier	0	29,882	3,695	966	34,543
Marlinton	1,418	7,522	3,003	2,543	14,486
Potomac	7,007	9,718	2,849	1,677	21,251
White Sulphur Springs	376	0	2,755	83	3,214
Total	8,801	68,146	18,118	9,742	104,808

\* Unknown damage includes: conifer mortality, native defoliation, etc



## Gypsy Moth

Gypsy moth caterpillars noticeably defoliated 8,801 acres of oak forest within the Potomac and Marlinton Ranger Districts. Site visits and egg mass surveys to these areas documented the presence of very few new egg masses. Based on these findings it is believed that a suppression project is not needed at this point, but the potential for an outbreak in this area is possible in the future. We will continue to monitor gypsy moth activity and numbers within these areas.

## Beech Bark Disease

Widespread past and present American beech mortality and discoloration were mapped on 68,146 acres (Figures 1 and 2). Ground truthing of these areas revealed that a complex of agents caused this mortality, including classic beech bark disease (BBD). Other factors, such as drought, defoliation, frost, and ambrosial beetles, have also played a role. Classic BBD is caused by a combination of native fungi and an introduced insect. BBD results from the interaction between the introduced beech scale insect *Cryptococcus fagisuga* Lind. and the fungus *Nectria coccinea* var. *faginata* Lohman or *N. galligena* Bres. This complex can cause significant bole cankering and mortality in American beech, *Fagus grandifolia* (Ehrh.).



Figure 1. Light American beech mortality and discoloration.



Figure 2. Heavy American beech mortality and discoloration.

## Anthracnose

Anthracnose leaf blights and leaf spot injury were also observed on 18,118 acres throughout the forest (Figures 3 and 4) on a variety of hardwoods (chestnut oak, white oak, maples, sycamore, etc.), but FHP personnel never isolated the causal agents. Most of the observed damage due to these leaf diseases was confined to the mid and lower canopy of the overstory trees, but damage was also evident on seedling, saplings and poles. Anthracnose is caused by native fungi, and wet, cool spring weather such as we have had this season promotes this disease. Severity varies with tree species and ranges from light to complete defoliation, which reduces growth and predisposes affected trees to other stress factors. The scorched, blotched, and tattered fungus-infected leaves give trees an unsightly and reddish-brown appearance that is visible from a distance.



Figure 3. Anthracnose lesions on American beech.



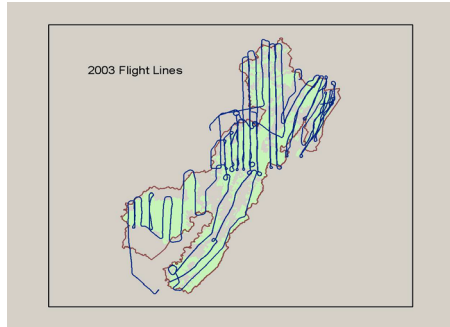
Figure 4. Leaf spots and anthracnose lesions on maple.

## Unknown Damage and Native Defoliators

Several areas of discoloration, native defoliation, and mortality were also mapped throughout the forest. FHP is planning on visiting these sites in the near future to determine the extent and cause of this damage.

### Digital System

This is the first time a digital sketchmapping system was used to map areas of insect and disease activity. This new digital system will hopefully result in better mapping accuracy and a reduction in the time spent during post processing. The new system tracks the flight path of the aircraft, which will aid in confirming good coverage of the forest (Figure 5).



**Figure 5. Flight path of aircraft over the Monongahela National Forest**

We ask that all field personnel continue to monitor for evidence of defoliation, and disease in their areas and report this information to the Morgantown Field Office as a ground check to the aerial survey polygons.

I personally would also like to extend my appreciation to Amy, Kenneth and Tracy for their valuable assistance in this survey. If you or any of your staff have any questions or comments regarding this survey, please contact Richard Turcotte at (304) 285-1544.

Sincerely,

JOHN W. HAZEL  
Field Representative  
Morgantown Field Office

Enclosures

Cc: District Ranger, Cheat RD w/enclosures  
District Ranger, Gauley RD w/enclosures  
District Ranger, Greenbrier RD w/enclosures  
District Ranger, Marlinton RD w/enclosures  
District Ranger, Potomac RD w/enclosures  
District Ranger, White Sulphur Springs RD w/enclosures

RMT/AKS